

ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA

Application for Certification of	)	Docket No. 02-AFC-3
The Pico Power Project	)	
By Silicon Valley Power	)	Final Revisions to Staff's
	)	Air Quality Assessment

The Energy Commission staff hereby files the following documents:

- "Pico Power Project Final Revisions to Staff's Air Quality Assessment" ("Final Revisions") and
- Declaration of Gabriel D. Taylor.

The attached Final Revisions update the Staff Assessment, Phase 2, on Air Quality for the Pico Power Project. The Staff Assessment, Phase 2, was initially issued on May 30, 2003, was modified by staff's errata at the June 11, 2003 evidentiary hearing, and was entered into the record at the June 11, 2003 evidentiary hearing.

The Final Revisions are based on the Final Determination of Compliance for the Pico Power Project, which was issued by the Bay Area Air Quality Management District and dated July 7, 2003. The Declaration is that of staff's witness who prepared the Final Revisions. Matt Trask, staff's Project Manager for the Pico Power Project, conferred with the applicant on July 22, 2003, to confirm that the applicant and staff are in agreement with the changes reflected in the staff's Final Revisions, which include changes reflected in the Final Determination of Compliance.

Dated: July 22, 2003

Respectfully submitted,

/s/ Arlene L. Ichien

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# PICO POWER PROJECT

## FINAL REVISIONS TO STAFF'S AIR QUALITY ASSESSMENT

Testimony of Gabriel D. Taylor

### INTRODUCTION

The Bay Area Air Quality Management District issued its Final Determination of Compliance (FDOC) for the Pico Power Project on July 7, 2003. The FDOC reflects several, but minor, corrections the District made to the calculations underlying the Preliminary Determination of Compliance (PDOC). In addition, according to the District, the emissions from the project were revised downward in the FDOC, as compared to the PDOC, because of new guaranteed emissions data provided by the equipment vendor. Applicant and staff are in agreement with the District over the changes reflected in the FDOC.

On July 5, 2003, the California Air Resources Board approved a change in the state annual average PM<sub>10</sub> standard from 30 µg/m<sup>3</sup> to 20 µg/m<sup>3</sup>. As a result of the changes reflected in the FDOC and the newly approved state annual average PM<sub>10</sub> standard, staff hereby revises **Air Quality Tables 1, 9, 10, and 11** from Phase 2 of its Staff Assessment for the Pico Power Project, filed May 30, 2003, and modified by Staff's errata presented at the June 11, 2003, evidentiary hearing.

Staff's revised tables are presented below and are followed by the complete text of staff's proposed conditions of certification with appropriate verifications. Staff also made minor changes to the construction-related conditions (**AQ-C1** through **AQ-C6**), which the applicant has agreed to. The proposed operation-related conditions (**AQ-7** through **AQ-45**) contain revisions in accordance with the changes reflected in the FDOC and the newly approved state annual average PM<sub>10</sub> standard. Otherwise, they are the same conditions as those proposed in Phase 2 of the Staff Assessment, dated May 30, 2003, and modified by staff's errata presented at the June 11, 2003 hearing. The proposed conditions contain all the District's conditions from the FDOC. The revisions to staff's tables and to the proposed conditions of certification do not change staff's conclusion that the project, if certified, will not cause a significant adverse impact, provided the project complies with all the proposed conditions of certification as revised by the FDOC and presented in this document.

**AIR QUALITY Table 1**  
**Federal and State Ambient Air Quality Standards**

<b>Pollutant</b>	<b>Averaging Time</b>	<b>Federal Standard</b>	<b>California Standard</b>
Ozone (O <sub>3</sub> )	1 Hour	0.12 ppm (235 µg/m <sup>3</sup> )	0.09 ppm (180 µg/m <sup>3</sup> )
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )
	1 Hour	35 ppm (40 mg/m <sup>3</sup> )	20 ppm (23 mg/m <sup>3</sup> )
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Average	0.053 ppm (100 µg/m <sup>3</sup> )	-
	1 Hour	-	0.25 ppm (470 µg/m <sup>3</sup> )
Sulfur Dioxide (SO <sub>2</sub> )	Annual Average	0.03 ppm (80 µg/m <sup>3</sup> )	-
	24 Hour	0.14 ppm (365 µg/m <sup>3</sup> )	0.04 ppm (105 µg/m <sup>3</sup> )
	3 Hour	0.5 ppm (1300 µg/m <sup>3</sup> )	-
	1 Hour	-	0.25 ppm (655 µg/m <sup>3</sup> )
Respirable Particulate Matter (PM <sub>10</sub> )	24 Hour	150 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
	Annual Arithmetic Mean	50 µg/m <sup>3</sup>	20 µg/m <sup>3</sup>
Fine Particulate Matter (PM <sub>2.5</sub> )	24 Hour	65 µg/m <sup>3</sup>	-
	Annual Arithmetic Mean	15 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>
Sulfates (SO <sub>4</sub> )	24 Hour	-	25 µg/m <sup>3</sup>
Lead	30 Day Average	-	1.5 µg/m <sup>3</sup>
	Calendar Quarter	1.5 µg/m <sup>3</sup>	
Hydrogen Sulfide (H <sub>2</sub> S)	1 Hour	-	0.03 ppm (42µg/m <sup>3</sup> )
Vinyl Chloride (chloroethene)	24 Hour	-	0.010 ppm (26 µg/m <sup>3</sup> )
Visibility Reducing Particulates	1 Observation	-	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

## **Project Operating Emissions**

**AIR QUALITY Table 9**  
**Facility Maximum Short-Term Emissions**  
**(pounds per hour [lb/hr])**

<b>Operational Profile</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>POC</b>	<b>PM10</b>	<b>SO<sub>2</sub></b>
1 CTG Startup	41.0	35.0	2.0	3.00	0.32
1 CTG Steady State	3.52	4.29	1.20	3.00	0.32
Duct Burner	0.97	1.18	0.36	1.30	0.09
Cooling Tower	0	0	0	0.51	0
<b>Total Maximum Short-Term Emissions</b>	<b>45.5</b>	<b>40.5</b>	<b>3.6</b>	<b>7.8</b>	<b>0.73</b>

**AIR QUALITY Table 10**  
**Project Maximum Daily Emissions**  
**(pounds per day [lb/day])**

<b>Operational Profile</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>POC</b>	<b>PM10</b>	<b>SO<sub>2</sub></b>
2 CTG Cold Starts (1 hour each)	82	70	4	6	0.64
40 hours (20 x 2) CTG Steady State	147.84	180.18	50.4	126	13.4
2 CTG Shutdowns (1 hour each)	16	20	2.0	6	0.64
2 CTG Warm Starts (1 hour each)	82	70	4	6	0.64
32 hours (16 x 2) Duct Burner	31.04	37.76	11.52	41.6	2.88
24 hours Cooling Tower	-	-	-	12.24	-
<b>Total Maximum Daily Emissions</b>	<b>358.9</b>	<b>377.9</b>	<b>71.9</b>	<b>197.8</b>	<b>18.2</b>

**Air Quality Table 11**  
**Project Maximum Annual Emissions**  
**(tons per year [tpy])**

<b>Per Turbine Train Annual Emissions</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>POC</b>	<b>PM10</b>	<b>SO<sub>2</sub></b>
52 Cold Starts	1.1	0.9	0.1	0.1	-
200 Hot Starts	4.1	3.5	0.2	0.3	-
252 Shutdowns	1.0	1.3	0.1	0.4	-
8256 hours Steady State	14.5	17.7	5.0	12.4	1.3
1400 hours Duct Burners	0.7	0.8	0.3	0.9	0.1
<b>Total per Turbine Train</b>	<b>21.4</b>	<b>24.2</b>	<b>5.6</b>	<b>14.1</b>	<b>1.5</b>
160 hours Exceedance	0.5	-	-	-	-
8760 hours Cooling Tower	-	-	-	2.2	-
<b>Total Facility Annual Emissions (tpy)</b>	<b>43.3</b>	<b>48.4</b>	<b>11.2</b>	<b>30.3</b>	<b>2.9</b>

**AIR QUALITY Table 12**  
**Maximum Construction Impacts ( $\mu\text{g}/\text{m}^3$ )**

Pollutant	Averaging Time	Modeled Impact	Background	Total Impact	Limiting Standard	Percent of Standard
<b>NO<sub>2</sub></b>	1 hour	212.7	244	456.7	470	97%
	Annual	10.2	49	59.2	100	59%
<b>CO</b>	1 hour	750	10,350	11,100	23,000	48%
	8 hour	324	7,811	8,135	10,000	81%
<b>PM<sub>10</sub></b>	24 hour	46.4	114	160.4	50	321%
	Annual Arth. Mean	10.7	25.3	36	20	180%
<b>SO<sub>2</sub></b>	1 hour	157.4	78.6	236	655	36%
	24 hour	22.7	21	43.7	105	42%
	Annual	1.2	8	9.2	80	12%

Source: AFC Appendix E, Table 8.1E-4

**AIR QUALITY Table 17**  
**Emission Reduction Credits**

ERC Number	Source Location (City)	Date Banked	Source Type	NO <sub>x</sub> (tpy)	POC (tpy)
861	Martinez	5/22/1987	Refinery Modification	51.5	-
860	South San Francisco	12/6/1994	Paint Manufacturer Shutdown	-	5.0
865	Oakland	5/30/2002	Dematuring Tank Modification	-	6.5
Total ERCs Owned				51.5	11.5
Pico Power Project Emissions Limits				43.3	11.2

## CONDITIONS OF CERTIFICATION

### CONSTRUCTION AND COMMISSIONING CONDITIONS OF CERTIFICATION

**AQ-C1** The project owner shall designate and retain an on-site air quality construction mitigation manager (AQCMM) who shall be responsible for maintaining compliance with conditions **AQ-C2** through **AQ-C3** for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities identified in Conditions **AQ-C1** through **AQ-C3** to one or more air quality construction mitigation monitors. The on-site AQCMM shall have full access to areas of construction of the project site and linear facilities, and shall have the authority to appeal to the CPM to have the CPM stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM may have other responsibilities in addition to those described in this condition. The on-site AQCMM shall not be terminated without written consent from the CPM.

**Verification:** At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM, for approval, the name, contact information and qualifications for the on-site AQCMM and air quality construction mitigation monitors.

**AQ-C2** The project owner shall provide a construction mitigation plan, for approval, which shows the steps that will be taken, and reporting requirements, to ensure compliance with conditions **AQ-C3**.

**Verification:** At least 30 days prior to start any ground disturbance, the project owner shall submit to the CPM, for approval, the construction mitigation plan. The CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt. Otherwise, the plan shall be deemed approved.

**AQ-C3** The on-site AQCOMM shall submit to the CPM, in the monthly compliance report, a construction mitigation report that demonstrates compliance with the following mitigation measures for the purposes of preventing fugitive dust plumes from leaving the project site and controlling other construction-related emissions:

- a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered every four hours of construction activities, or as necessary to prevent fugitive dust plumes from leaving the project site. The frequency of watering can be reduced or eliminated during periods of precipitation.
- b) No vehicle shall exceed 10 miles per hour within the construction site.
- c) The construction site entrances shall be posted with visible speed limit signs.
- d) All vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
- e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
- f) All unpaved entrances to the construction site shall be graveled or treated with dust soil stabilization compounds.
- g) All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.
- h) Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan, to prevent run-off to roadways.
- i) All paved roads within the construction site shall be swept as necessary to prevent the accumulation of dirt and debris.
- j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept twice daily or as necessary to prevent the accumulation of dirt and debris.
- k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or be treated with appropriate dust suppressant compounds.
- l) All vehicles that are used to transport solid bulk material and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.

- m) Wind erosion control techniques, such as wind breaks, water, chemical dust suppressants and vegetation, shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.
- n) All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.
- o) All large construction diesel engines, which have a rating of 50 hp or more, shall meet, at a minimum, the Tier 1 ARB/U.S. EPA certified standards for off-road equipment.
- p) All large construction diesel engines, which have a rating of 50 hp or more that do not have an U.S. EPA Tier 1 particulate standard (50 to 175 hp engines) and do not meet Tier 2 particulate standards, shall be equipped with catalyzed diesel particulate filters (soot filters), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types.
- q) All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM that shows the engine meets the conditions **AQ-C3(o)** and **AQ-C3(p)** above.

Observations of visible dust plumes would indicate that the existing mitigation measures are not resulting in effective mitigation. The AQCMM shall implement the following procedures for additional mitigation measures if the AQCMM determines that the existing mitigation measures are not resulting in effective mitigation:

- r) The AQCMM shall direct more aggressive application of the mitigation methods currently in use within 15 minutes of making such a determination.
- s) The AQCMM shall direct implementation of additional methods of dust suppression if step a) specified above, fails to result in adequate mitigation within 30 minutes of the original determination.
- t) The AQCMM shall direct a temporary shutdown of the source of the emissions if step b) specified above fails to result in adequate mitigation within one hour of the original determination. The activity shall not restart until one full hour after the shutdown. The owner/operator may appeal to the CPM any directive from the AQCMM to shutdown a source, provided that the shutdown shall go into effect within one hour of the original determination unless overruled by the CPM before that time.

**Verification:** In the MCR, the project owner shall provide the CPM a copy of the construction mitigation report and any diesel fuel purchased records, which clearly demonstrates compliance with condition **AQ-C3**.

**AQ-C4** The project owner shall submit to the CPM for review and approval any modification proposed by either the project owner or issuing agency to any project air permit.

**Verification:** The project owner shall submit any proposed air permit modification to the CPM within five working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of receipt.

**AQ-C5** The project owner shall submit a plan for a fireplace retrofit/wood stove replacement program to the CPM for approval. The plan must be sufficient to secure 16.38 tons per year of PM10 based on the project emissions during the fall and winter quarters of each year. The plan shall provide the following elements:

- a) Provisions for a replacement fund to be made available on a first-come, first-serve basis to finance a five-year voluntary wood stove replacement/fireplace retrofit program. The replacement fund shall pay for the retrofit/replacement costs of current non-U.S. EPA certified fireplaces and wood stoves (up to a maximum of \$1,250 for each retrofit/replacement) with a U.S. EPA-certified solid fuel heating device. The fund shall be capable of being drawn upon in any year of the five year program and as allowed by conditions of certification until the fund is depleted.
- b) A list of approved retailers and professional, licensed installers. Each resident participating in the retrofit/replacement program would only do business with listed retailers or installers. Payments shall only be made to vendors or contractors who agree to participate in the program and who submit certification that the retrofit/replacement is permanent (by permanent removal of the wood stove doors and proper recycling of the old stove) and conforms to program requirements.
- c) A schedule for submission to the CPM of quarterly status reports on the program, the status of reimbursements, and remaining funds available. In addition, the fund shall be audited annually.
- d) A description of eligibility requirements, including that, for the first three years of the program, homes and businesses located within a 15-mile radius of the proposed facility will be eligible to participate in the program. Homes and businesses within a 25-mile radius of the PPP facility would be eligible to participate in the fourth and fifth years if there are remaining funds.
- e) A detailed schedule of deliverables.

**Verification:** No later than 60 days prior to first fire, the project owner shall provide the CPM, for approval, a copy of the wood stove replacement program, and a copy of the agreement document with the BAAQMD that describes the roles and responsibilities of the Project Owner and the BAAQMD in the wood stove replacement program.

**AQ-C6** The following ERC Certificates, and the amounts specified shall be surrendered per the requirements of Condition **AQ-41**:

43.3 tons NOx from ERC Certificate 861,  
11.2 tons of POC total from ERC Certificate 860 and ERC Certificate 865

**Verification:** At least 60 days prior to construction, the project owner/operator must surrender the ERC certificates identified above to the District and provide copies to the CPM.

## **CONDITIONS OF CERTIFICATION**

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The following Conditions of Certification are based upon conditions mandated by the Bay Area Air Quality Management District, which applies the conditions to each emission source



of the project. Each emission source receives a separate permit number, S-1 through S-5. These are:

- S-1 Combustion Gas Turbine #1, General Electric LM6000 PC SPRINT; 473.7 MM BTU per hour, equipped with water injection, abated by A-1 SCR and A-2 Oxidation Catalyst
- S-2 Heat Recovery Steam Generator #1, equipped with low emission Duct Burners, 136.9 MM BTU per hour, abated by A-1 SCR and A-2 Oxidation Catalyst
- S-3 Combustion Gas Turbine #2, General Electric LM6000 PC SPRINT; 473.7 MM BTU per hour, equipped with water injection, abated by A-3 SCR and A-4 Oxidation Catalyst
- S-4 Heat Recovery Steam Generator #2, equipped with low emission Duct Burners, 136.9 MM BTU per hour, abated by A-3 SCR and A-4 Oxidation Catalyst
- S-5 Cooling Tower, 3-Cell, 34,980 gallons per minute capacity, equipped with High Efficiency Drift Eliminators

Conditions AQ-1 through AQ-12 shall only apply during the commissioning period. Unless otherwise indicated, Conditions AQ-13 through AQ-47 shall apply after the commissioning period has ended. The applicable District rule, regulation or plan is cited in parenthesis at the end of each condition of certification, just before the verification paragraph. For definitions of the technical terms in Conditions AQ-13 through AQ-47, the reader is referred to the BAAQMD's Preliminary Determination of Compliance for the Pico Power Project.

## **CONDITIONS FOR THE COMMISSIONING PERIOD**

**AQ-1** The Owner/Operator of the Pico Power Plant shall minimize emissions of carbon monoxide and nitrogen oxides from S-1, S-3 Gas Turbines and S-2, S-4 Heat Recovery Steam Generators (HRSGs) to the maximum extent possible during the commissioning period.

**Verification:** The project Owner/Operator shall propose a schedule of compliance with this Condition of Certification in the Commissioning Plan required by Condition **AQ-5** and document continuing compliance with this Condition of Certification in each Monthly Emissions Report required by Condition **AQ-11**.

**AQ-2** At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, the Owner/Operator shall tune the S-1 & S-3 Gas Turbine combustors and S-2 & S-4 Heat Recovery Steam Generator duct burners to minimize the emissions of carbon monoxide and nitrogen oxides.

**Verification:** The project Owner/Operator shall propose a schedule of compliance with this Condition of Certification in the Commissioning Plan required by Condition **AQ-5** and document continuing compliance with this Condition of Certification in each Monthly Emissions Report required by Condition **AQ-11**.

**AQ-3** At the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor, the Owner/Operator shall install, adjust, and operate the A-1 & A-3 SCR Systems and A-2 & A-4 Oxidation Catalysts to minimize the emissions of carbon monoxide and nitrogen oxides from S-1, S-3 Gas Turbines, S-2, S-4 Heat Recovery Steam Generators.

**Verification:** The project Owner/Operator shall propose a schedule of compliance with this Condition of Certification in the Commissioning Plan required by Condition AQ-5 and document continuing compliance with this Condition of Certification in each Monthly Emissions Report required by Condition **AQ-11**.

**AQ-4** Coincident with the steady-state operation of A-1 & A-3 SCR Systems and A-2 & A-4 Oxidation Catalysts pursuant to Conditions **AQ-3**, **AQ-8**, and **AQ-9** the Owner/Operator shall operate the Gas Turbines (S-1 & S-3) and the HRSGs (S-2 & S-4) in such a manner as to comply with the NO<sub>x</sub> and CO emission limitations specified in Conditions

**Verification:** Coincident with the as-designed operation of A-1 and A-2 SCR Systems, pursuant to Conditions **AQ-3**, **AQ-10**, **AQ-11**, and **AQ-12**, the Gas Turbines (S-1 and S-3) and the HRSGs (S-2 and S-4) the Owner/Operator shall operate the facility in a manner such that comply with the NO<sub>x</sub> and CO emission limitations specified in Conditions **AQ-20(a)** through **AQ-20(d)**.

**AQ-5** The Owner/Operator of Pico Power Plant shall submit a plan to the District Permit Services Division and the CEC Compliance Project Manager (CPM) at least four weeks prior to first firing of S-1 or S-3 Gas Turbines describing the procedures to be followed during the commissioning of the turbines, HRSGs, and steam turbine. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not be limited to, the tuning of the gas turbine combustors, water injection system, and the duct burners associated with the HRSGs; the installation and operation of the required emission control systems; the installation, calibration, and testing of the CO and NO<sub>x</sub> continuous emission monitors; and any activities requiring the firing of the Gas Turbines (S-1 & S-3), HRSGs (S-2 & S-4), without abatement by their respective SCR Systems (A-1 & A-3) and/or Oxidation Catalysts (A-2 & A-4). The Owner/Operator shall not fire any of the Gas Turbines (S-1 & S-3) sooner than 28 days after the District receives the commissioning plan.

**Verification:** The project Owner/Operator shall submit a Commissioning Plan to the District Permit Services Division and the CPM for approval at least four (4) weeks prior to first fire of S-1, S-2, S-3 and S-4.

**AQ-6** During the commissioning period, the Owner/Operator of Pico Power Plant shall demonstrate compliance with Conditions **AQ-10** and **AQ-11** through the use of properly operated and maintained continuous emission monitors and data recorders for the following parameters:

firing hours  
fuel flow rates  
stack gas nitrogen oxide emission concentrations,

stack gas carbon monoxide emission concentrations  
stack gas oxygen concentrations.

The monitored parameters shall be recorded at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation) for the Gas Turbines (S-1 & S-3), and HRSGs (S-2 & S-4). The Owner/Operator shall use District-approved methods to calculate heat input rates, nitrogen dioxide mass emission rates, carbon monoxide mass emission rates, and NO<sub>x</sub> and CO emission concentrations, summarized for each clock hour and each calendar day. The Owner/Operator shall retain records on site for at least 5 years from the date of entry and make such records available to District personnel upon request.

**Verification:** The project Owner/Operator shall propose a schedule of compliance with this Condition of Certification in the Commissioning Plan required by Condition **AQ-5** and document continuing compliance with this Condition of Certification in each Monthly Emissions Report required by Condition **AQ-11**.

**AQ-7** The Owner/Operator shall install, calibrate, and operate the District-approved continuous monitors specified in Condition **AQ-6** prior to first firing of the Gas Turbines (S-1 & S-3), and Heat Recovery Steam Generators (S-2 & S-4). After first firing of the gas turbines, the Owner/Operator shall adjust the detection range of these continuous emission monitors as necessary to accurately measure the resulting range of CO and NO<sub>x</sub> emission concentrations. The type, specifications, and location of these monitors shall be subject to District review and approval.

**Verification:** The project Owner/Operator shall notify the District and CPM of the date of expected first fire at least 30 days prior to first fire and shall make the project site available for inspection if desired by either the District or CPM. The project Owner/Operator shall propose a schedule of compliance with this Condition of Certification in the Commissioning Plan required by Condition **AQ-5** and document continuing compliance with this Condition of Certification in each Monthly Emissions Report required by Condition **AQ-11**.

**AQ-8** The Owner/Operator shall not fire the S-1 Gas Turbine and S-2 Heat Recovery Steam Generator without abatement of nitrogen oxide emissions by A-1 SCR System and/or abatement of carbon monoxide emissions by A-2 Oxidation Catalyst for more than 300 hours during the commissioning period. Such operation of S-1 Gas Turbine and S-2 HRSG without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system and/or oxidation catalyst in place. Upon completion of these activities, the Owner/Operator shall provide written notice to the District Permit Services and Enforcement Divisions and the unused balance of the 300 firing hours without abatement shall expire.

**Verification:** The project Owner/Operator shall submit documentation of compliance with this Condition of Certification in the Monthly Emissions Report required by Condition **AQ-11**.

**AQ-9** The Owner/Operator shall not fire the S-3 Gas Turbine and S-4 Heat Recovery Steam Generator without abatement of nitrogen oxide emissions by A-3 SCR System and/or abatement of carbon monoxide emissions by A-4 Oxidation Catalyst for more than 300 hours during the commissioning period. Such operation of S-3

Gas Turbine and S-4 HRSG without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system and/or oxidation catalyst in place. Upon completion of these activities, the Owner/Operator shall provide written notice to the District Permit Services and Enforcement Divisions and the unused balance of the 300 firing hours without abatement shall expire.

**Verification:** The project Owner/Operator shall submit documentation of compliance with this Condition of Certification in the Monthly Emissions Report required by Condition **AQ-11**.

**AQ-10** The total mass emissions of nitrogen oxides, carbon monoxide, precursor organic compounds, PM<sub>10</sub>, and sulfur dioxide that are emitted by the Gas Turbines (S-1 & S-3) and Heat Recovery Steam Generators (S-2 & S-4) during the commissioning period shall accrue towards the consecutive 12-month emission limitations specified in Condition **AQ-23**.

**Verification:** The project Owner/Operator shall submit documentation of compliance with this Condition of Certification in the Monthly Emissions Report required by Condition **AQ-11**.

**AQ-11** The Owner/Operator shall not operate the Gas Turbines (S-1 & S-3) and Heat Recovery Steam Generators (S-2 & S-4) in a manner such that the combined pollutant emissions from these sources will exceed the following limits during the commissioning period. These emission limits shall include emissions resulting from the startup and shutdown of the Gas Turbines (S-1 & S-3).

NO <sub>x</sub> (as NO <sub>2</sub> )	358.9 pounds per calendar day	18 pounds per hour
CO	377.9 pounds per calendar day	45 pounds per hour
POC (as CH <sub>4</sub> )	71.9 pounds per calendar day	
PM <sub>10</sub>	197.8 pounds per calendar day	
SO <sub>2</sub>	18.2 pounds per calendar day	

**Verification:** During the Commissioning Period, as defined in the district FDOC, the project Owner/Operator shall submit to the CPM for approval, a Monthly Emissions Report that includes, but is not limited to, fuel use, turbine operation, post combustion control operation, ammonia use and CEM readings on an hourly and daily basis. The Monthly Emissions Report for each month must be submitted by the 15<sup>th</sup> (or the following Monday if the 15<sup>th</sup> is a Saturday or Sunday) of the following month.

**AQ-12** Prior to the end of the Commissioning Period, the Owner/Operator of the Pico Power Plant shall conduct a District and CEC approved source test using external continuous emission monitors to determine compliance with the limitations specified in Condition **AQ-21**. The source test shall determine NO<sub>x</sub>, CO, and POC emissions during startup and shutdown of the gas turbines. The POC emissions shall be analyzed for methane and ethane to account for the presence of unburned natural gas. The source test shall include a minimum of three startup and three shutdown periods. Thirty working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CEC Compliance Project Manager (CPM) a detailed source test plan designed to satisfy the requirements of this Condition. The District and the CEC CPM will notify the Owner/Operator of any necessary modifications to the plan within 20 working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall

incorporate the District and CEC CPM comments into the test plan. The Owner/Operator shall notify the District and the CEC CPM within seven (7) working days prior to the planned source testing date. Source test results shall be submitted to the District and the CEC CPM within 60 days of the source testing date.

**Verification:** No later than 20 working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this Condition. The District and the CPM will notify the Owner/Operator of any necessary modifications to the plan within 20 working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District and CPM comments into the test plan. The Owner/Operator shall notify the District and the CPM within 7 working days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within 30 days of the source testing date.

### **Conditions for the Gas Turbines (S-1 & S-3) and the Heat Recovery Steam Generators (HRSGs; S-2 & S-4)**

**AQ-13** The Owner/Operator shall fire the Gas Turbines (S-1 & S-3) and HRSG Duct Burners (S-2 & S-4) exclusively with natural gas. (BACT for SO<sub>2</sub> and PM<sub>10</sub>)

**Verification:** A detailed report of fuel use and equipment operation shall be included in the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-14** The Owner/Operator shall not operate the units such that the combined heat input rate to each power train consisting of a Gas Turbine and its associated HRSG (S-1 & S-2 and S-3 & S-4) exceeds 610.6 MM BTU (HHV) per hour, averaged over any rolling 3-hour period. (BACT and Cumulative Increase)

**Verification:** A detailed report of fuel use and equipment operation shall be included in the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-15** The Owner/Operator shall not operate the units such that the combined heat input rate to each power train consisting of a Gas Turbine and its associated HRSG (S-1 & S-2 and S-3 & S-4) exceeds 13,559.2 MM BTU (HHV) per calendar day. (BACT and Cumulative Increase)

**Verification:** A detailed report of fuel use and equipment operation shall be included in the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-16** The Owner/Operator shall not operate the units such that the combined cumulative heat input rate for the Gas Turbines (S-1 & S-3) and the HRSGs (S-2 & S-4) exceeds 8,682,544 MM BTU (HHV) per year. (Offsets and Cumulative Increase)

**Verification:** A detailed report of fuel use and equipment operation shall be included in the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-17** The Owner/Operator shall not fire the HRSG duct burners (S-2 & S-4) unless its associated Gas Turbine (S-1 & S-3 respectively) is in operation.

**Verification:** The project Owner/Operator shall make the project site available for inspection at any time by representatives of the District, ARB, U.S. EPA and CEC.

**AQ-18** The Owner/Operator shall ensure that the S-1 Gas Turbine and S-2 HRSG are abated by the properly operated and properly maintained A-1 Selective Catalytic Reduction (SCR) System whenever fuel is combusted at those sources and the A-1 SCR catalyst bed has reached minimum operating temperature. (BACT for NO<sub>x</sub>)

**Verification:** The project Owner/Operator shall make the project site available for inspection at any time by representatives of the District, ARB, U.S. EPA and CEC.

**AQ-19** The Owner/Operator shall ensure that the S-3 Gas Turbine and S-4 HRSG are abated by the properly operated and properly maintained A-3 Selective Catalytic Reduction (SCR) System whenever fuel is combusted at those sources and the A-3 SCR catalyst bed has reached minimum operating temperature. (BACT for NO<sub>x</sub>)

**Verification:** The project Owner/Operator shall make the project site available for inspection at any time by representatives of the District, ARB, U.S. EPA and CEC.

**AQ-20** The Owner/Operator shall ensure that the Gas Turbines (S-1 & S-3) and HRSGs (S-2 & S-4) comply with requirements (a) through (i) under all operating scenarios, including duct burner firing mode and power augmentation mode. Requirements (a) through (i) do not apply during a gas turbine start-up or shutdown. (BACT and Toxic Risk Management Policy)

- (a) The nitrogen oxide (NO<sub>x</sub>) emission concentration at emission points P-1 and P-2 each shall not exceed 2.0 ppmv, on a dry basis, corrected to 15% O<sub>2</sub>, averaged over any 1-hour period. (BACT for NO<sub>x</sub>)
- (b) Nitrogen oxide mass emissions (calculated as NO<sub>2</sub>) at P-1 (the combined exhaust point for S-1 Gas Turbine and S-2 HRSG after abatement by A-1 SCR System) shall not exceed 4.49 pounds per hour. Nitrogen oxide mass emissions (calculated as NO<sub>2</sub>) at P-2 (the combined exhaust point for S-3 Gas Turbine and S-4 HRSG after abatement by A-3 SCR System) shall not exceed 4.49 pounds per hour. (BACT for NO<sub>x</sub>)
- (c) The carbon monoxide emission concentration at P-1 and P-2 each shall not exceed 4.0 ppmv, on a dry basis, corrected to 15% O<sub>2</sub>, averaged over any rolling 3-hour period. (BACT for CO)
- (d) Carbon monoxide mass emissions at P-1 and P-2 each shall not exceed 5.47 pounds per hour, averaged over any rolling 3-hour period.
- (e) Ammonia (NH<sub>3</sub>) emission concentrations at P-1 and P-2 each shall not exceed 10 ppmv, on a dry basis, corrected to 15% O<sub>2</sub>, averaged over any rolling 3-hour period. This ammonia emission concentration shall be verified by the continuous recording of the ammonia injection rate to A-1 and A-3 SCR Systems. The correlation between the gas turbine and HRSG heat input rates, A-1 and A-3 SCR System ammonia injection rates, and corresponding ammonia emission concentration at emission points P-1 and P-2 shall be determined in accordance with Condition **AQ-30**. (Toxic Risk Management Policy for NH<sub>3</sub>)
- (f) Precursor organic compound (POC) mass emissions (as CH<sub>4</sub>) at P-1 and P-2 each shall not exceed 2.0 ppmv, on a dry basis, corrected to 15% O<sub>2</sub>, averaged over any rolling 3-hour period. (BACT for POC)

- (g) Precursor organic compound (POC) mass emissions (as CH<sub>4</sub>) at P-1 and P-2 each shall not exceed 1.56 pounds per hour or 0.00255 lb/MM BTU of natural gas fired. (BACT for POC)
- (h) Sulfur dioxide (SO<sub>2</sub>) mass emissions at P-1 and P-2 each shall not exceed 0.41 pounds per hour or 0.000676 lb/MM BTU of natural gas fired. (BACT for SO<sub>2</sub>)
- (i) Particulate matter (PM<sub>10</sub>) mass emissions at P-1 and P-2 each shall not exceed 3.0 pounds per hour when the HRSG duct burners are not in operation. Particulate matter (PM<sub>10</sub>) mass emissions at P-1 and P-2 each shall not exceed 4.3 pounds per hour when HRSG duct burners are in operation. (BACT for PM<sub>10</sub>)

Compliance with the hourly NO<sub>x</sub> emission limitations specified in Condition **AQ-25(a)** and **AQ-25(b)**, at both P1 and P2, shall not be required during short-term excursions, limited to a cumulative total of 160 hours per rolling 12 month period. Short-term excursions are defined as 15-minute periods designated by the Owner/Operator that are the direct result of transient load conditions, not to exceed four consecutive 15-minute periods, when the 15-minute average NO<sub>x</sub> concentration exceeds 2.0 ppmv, dry @ 15% O<sub>2</sub>. Examples of transient load conditions include, but are not limited to the following:

- (1) Initiation/shutdown of combustion turbine inlet air cooling
- (2) Initiation/shutdown of combustion turbine water mist or steam injection for power augmentation
- (3) Rapid combustion turbine load changes
- (4) Initiation/shutdown of HRSG duct burners
- (5) Provision of Ancillary Services and Automatic Generation Control at the direction of the California Independent System Operator (Cal-ISO)

The maximum 1-hour average NO<sub>x</sub> concentration for short-term excursions at P-1 and P-2 each shall not exceed 5 ppmv, dry @ 15 percent O<sub>2</sub> or 11.2 lb/hr (2.80 lb per 15 minute period). All emissions during short-term excursions shall be included in all calculations of hourly, daily and annual mass emission rates as required by this permit.

**Verification:** The project Owner/Operator shall submit documentation of compliance with all emission limits specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-21** The Owner/Operator shall ensure that the regulated air pollutant mass emission rates from each of the Gas Turbines (S-1 & S-3) during a startup or a shutdown does not exceed the respective limits established below.

	Start-Up (lb/hr)	Shutdown (lb/hr)
Oxides of Nitrogen (as NO <sub>2</sub> )	41	8
Carbon Monoxide (CO)	35	10
Precursor Organic Compounds (as CH <sub>4</sub> )	2	1
Particulate Matter (PM <sub>10</sub> )	3	3

**Verification:** The project Owner/Operator shall submit documentation of compliance with the emission limits in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

#### **Conditions for All Sources**

**AQ-22** The Owner/Operator shall not allow total combined emissions from the Gas Turbines and HRSGs (S-1 & S-2 and S-3 & S-4) including emissions generated during Gas Turbine startups and shutdowns and transient excursions to exceed the following limits during any calendar day:

- (a) 358.9 pounds of NO<sub>x</sub> (as NO<sub>2</sub>) per day
- (b) 377.9 pounds of CO per day
- (c) 71.9 pounds of POC (as CH<sub>4</sub>) per day
- (d) 197.8 pounds of PM10 per day
- (e) 18.2 pounds of SO<sub>2</sub> per day

**Verification:** The project Owner/Operator shall submit documentation of compliance with all emission limits specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-23** The Owner/Operator shall not allow cumulative combined emissions from the Gas Turbines and HRSGs (S-1 & S-2 and S-3 & S-4) including emissions generated during Gas Turbine startups and shutdowns and transient excursions to exceed the following limits during any consecutive 12-month period:

- (a) 43.3 tons of NO<sub>x</sub> (as NO<sub>2</sub>) per year
  - (b) 48.4 tons of CO per year
  - (c) 11.2 tons of POC (as CH<sub>4</sub>) per year
  - (d) 28.1 tons of PM10 per year
  - (e) 2.93 tons of SO<sub>2</sub> per year
- (Offsets and Cumulative Increase)

**Verification:** The project Owner/Operator shall submit documentation of compliance with all emission limits specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-24** The Owner/Operator shall not allow the combined heat input rate to the Gas Turbines and HRSGs (S-1 & S-2 and S-3 & S-4) to exceed 27,118.4 MMBTU per calendar day.

**Verification:** A detailed report of fuel use and equipment operation shall be included in the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-25** The Owner/Operator shall not allow the cumulative heat input rate to the Gas Turbines and HRSGs (S-1, S-2, S-3, S-4) combined to exceed 8,682,544.0 MMBTU per year.



**Verification:** A detailed report of fuel use and equipment operation shall be included in the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-26** The Owner/Operator shall not allow the maximum projected annual toxic air contaminant emissions (per Condition **AQ-29** and **AQ-33**) from the Gas Turbines and HRSGs (S-1 & S-2 and S-3 & S-4) combined to exceed the following limits:

acetaldehyde	1,155	pounds per year
formaldehyde	2,706	pounds per year
benzene	112	pounds per year
Specified PAHs	0.71	pound per year

unless the following requirement is satisfied:

The Owner/Operator shall perform a health risk assessment to determine the total facility risk using the emission rates determined by District approved source testing and the most current Bay Area Air Quality Management District approved procedures and unit risk factors in effect at the time of the analysis. This risk analysis shall be submitted to the District and the CEC Compliance Project Manager (CPM) within 60 days of the source test date. The Owner/Operator may request that the District and the CEC CPM revise the carcinogenic compound emission limits specified above. If the Owner/Operator demonstrates to the satisfaction of the APCO that these revised emission limits will not result in a significant cancer risk, the District and the CEC CPM may, at their discretion, adjust the carcinogenic compound emission limits listed above. (Toxic Risk Management Policy)

**Verification:** If prepared, the health risk analysis shall be submitted to the District and the CPM within 60 days of the source test date. Otherwise, the project Owner/Operator shall submit documentation of compliance with all emission limits specified in this Condition of Certification as part of the January 30 Quarterly Air Quality Report each year required by the verification of Condition **AQ-34**.

**AQ-27** The Owner/Operator shall demonstrate compliance with Conditions **AQ-14** through **AQ-17**, **AQ-20(a)** through **AQ-20(d)**, **AQ-21**, **AQ-22(a)**, **AQ-22(b)**, **AQ-23(a)**, and **AQ-23(b)** by using properly operated and maintained continuous monitors (during all hours of operation including equipment Start-up and Shutdown periods) for all of the following parameters:

- (a) Firing Hours and Fuel Flow Rates for each of the following sources: S-1 & S-2 combined, S-3 & S-4 combined.
- (b) Oxygen (O<sub>2</sub>) concentration, nitrogen oxides (NO<sub>x</sub>) concentration, and carbon monoxide (CO) concentration at each of the following exhaust points: P-1 and P-2.
- (c) Ammonia injection rate at A-1 and A-3 SCR Systems
- (d) Any transient load conditions recorded in **AQ-27(a)** above and as described in **AQ-20(j)** shall be fully characterized and recorded on a quarter hour (15-minute period) basis.

The Owner/Operator shall record all of the above parameters every 15 minutes (excluding normal calibration periods) and shall summarize all of the above parameters for each clock hour. For each calendar day, the Owner/Operator shall calculate and record the total firing hours, the average hourly fuel flow rates, and pollutant emission concentrations.

The Owner/Operator shall use the parameters measured above and District-approved calculation methods to calculate the following parameters:

- (e) Heat Input Rate for each of the following sources: S-1 & S-2 combined and S-3 & S-4 combined.
- (f) Corrected NO<sub>x</sub> concentration, NO<sub>x</sub> mass emission rate (as NO<sub>2</sub>), corrected CO concentration, and CO mass emission rate at each of the following exhaust points: P-1 and P-2.

For each source, source grouping, or exhaust point, the Owner/Operator shall record the parameters specified in Conditions **AQ-27(e)** and **AQ-27(f)** at least once every 15 minutes (excluding normal calibration periods). As specified below, the Owner/Operator shall calculate and record the following data:

- (g) Total Heat Input Rate for every clock hour and the average hourly Heat Input Rate for every rolling 3-hour period.
- (h) On an hourly basis, the cumulative total Heat Input Rate for each calendar day for the following: each Gas Turbine and associated HRSG combined and all four sources (S-1, S-2, S-3, and S-4) combined.
- (i) The average NO<sub>x</sub> mass emission rate (as NO<sub>2</sub>) and corrected NO<sub>x</sub> emission concentration for every clock hour and for every quarter hour (15-minute) period.
- (j) The average CO mass emission rate and corrected CO emission concentration for every clock hour and for every rolling 3-hour period.
- (k) On an hourly basis, the cumulative total NO<sub>x</sub> mass emissions (as NO<sub>2</sub>) and the cumulative total CO mass emissions, for each calendar day for each Gas Turbine and associated HRSG combined, and all four sources (S-1, S-2, S-3, and S-4) combined.
- (l) For each calendar day, the average hourly Heat Input Rates, Corrected NO<sub>x</sub> emission concentration, NO<sub>x</sub> mass emission rate (as NO<sub>2</sub>), corrected CO emission concentration, and CO mass emission rate for each Gas Turbine and associated HRSG combined
- (m) On a daily basis, the cumulative total NO<sub>x</sub> mass emissions (as NO<sub>2</sub>) and cumulative total CO mass emissions, for the previous consecutive twelve month period for all four sources (S-1, S-2, S-3, and S-4) combined.

(Regulation 1-520.1, 9-9-501, BACT, NSPS, Cumulative Increase)

**Verification:** The project Owner/Operator shall submit documentation of each of the parameters specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-28** To demonstrate compliance with Conditions **AQ-20(f)**, **AQ-20(g)**, **AQ-20(h)**, **AQ-20(i)**, **AQ-21**, **AQ-22(c)** through **AQ-22(e)**, and **AQ-23(c)** through **AQ-23(e)**, the Owner/Operator shall calculate and record on a daily basis, the Precursor Organic Compound (POC) mass emissions, Fine Particulate Matter (PM<sub>10</sub>) mass emissions (including condensable particulate matter), and Sulfur Dioxide (SO<sub>2</sub>) mass emissions from each power train. The Owner/Operator shall use the actual Heat Input Rates calculated pursuant to Condition **AQ-27**, actual Gas Turbine Start-up Times, actual Gas Turbine Shutdown Times, and CEC and District-approved emission factors to calculate these emissions. The calculated emissions shall be presented as follows:

- (a) For each calendar day, POC, PM<sub>10</sub>, and SO<sub>2</sub> emissions shall be summarized for: each power train (Gas Turbine and its respective HRSG combined) and all four sources (S-1, S-2, S-3, and S-4) combined.
  - (b) on a daily basis, the cumulative total POC, PM<sub>10</sub>, and SO<sub>2</sub> mass emissions, for each year for all four sources (S-1, S-2, S-3, and S-4) combined.
- (Offsets, Cumulative Increase)

**Verification:** The project Owner/Operator shall submit documentation of each of the parameters specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-29** To demonstrate compliance with Condition **AQ-26**, the Owner/Operator shall calculate and record on an annual basis the maximum projected annual emissions of: acetaldehyde, formaldehyde, benzene, and Specified PAHs. Maximum projected annual emissions shall be calculated using the maximum Heat Input Rate of 8,682,544 MMBTU/year and the highest emission factor (pounds of pollutant per MMBTU of heat input) determined by any District approved source test of the S-1 and S-3 Gas Turbines and/or S-2 and S-4 Heat Recovery Steam Generators. If the highest emission factor for a given pollutant occurs during minimum-load turbine operation, a reduced annual heat input rate may be utilized to calculate the maximum projected annual emissions to reflect the reduced heat input rates during gas turbine start-up and minimum-load operation. The reduced annual heat input rate shall be subject to District review and approval. (Toxic Risk Management Policy).

**Verification:** The project Owner/Operator shall submit documentation of each of the parameters specified in this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-30** Within 60 days of start-up of the Pico Power Plant, the Owner/Operator shall conduct District-approved source tests on exhaust point P-1 and P-2 to determine the corrected ammonia (NH<sub>3</sub>) emission concentration to determine compliance with Condition **AQ-20(e)**. The source test shall determine the correlation between the heat input rates of each gas turbine (S-1 and S-3) and associated HRSG (S-2 and S-4), A-1, and A-3 SCR System ammonia injection rates, and the corresponding NH<sub>3</sub> emission concentrations at emission point P-1 and P-2. The source tests shall be conducted over the expected operating range of the turbine and HRSG (including, but not limited to, minimum and full load, and SPRINT power augmentation mode) to establish the range of ammonia injection rates necessary to achieve required NO<sub>x</sub> emission reductions while maintaining ammonia slip levels. Source testing shall be

repeated on an annual basis thereafter. Ongoing compliance with Condition **AQ-20(e)** shall be demonstrated through calculations of corrected ammonia concentrations based upon the source test correlation and continuous records of ammonia injection rate. Source test results shall be submitted to the District and the CEC Compliance Project Manager within 90 days of conducting the tests. (Toxic Risk Management Policy)

**Verification:** Initial source testing shall be completed within 60 days of start-up. No later than 20 working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this Condition. The District and the CPM will notify the Owner/Operator of any necessary modifications to the plan within 20 working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District and CPM comments into the test plan. The Owner/Operator shall notify the District and the CPM within 7 working days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within 60 days of the source testing date.

**AQ-31** Within 90 days of start-up of the Pico Power Plant and on an annual basis thereafter, the Owner/Operator shall conduct a District-approved source test on exhaust points P-1 and P-2 while each Gas Turbine and associated Heat Recovery Steam Generator are operating at maximum load (including SPRINT power augmentation mode) to determine compliance with Conditions **AQ-20(a), (b), (c), (d), (f), (g), (h), and (i)** while each Gas Turbine and associated Heat Recovery Steam Generator are operating at minimum load to determine compliance with Conditions **AQ-20(c) and (d)**, and to verify the accuracy of the continuous emission monitors required in Condition **AQ-27**. The Owner/Operator shall test for (at a minimum): water content, stack gas flow rate, oxygen concentration, precursor organic compound concentration and mass emissions, nitrogen oxide concentration and mass emissions (as NO<sub>2</sub>), carbon monoxide concentration and mass emissions, sulfur dioxide concentration and mass emissions, methane, ethane, and particulate matter (PM<sub>10</sub>) emissions including condensable particulate matter. Source test results shall be submitted to the District and the CEC Compliance Project Manager within 60 days of conducting the tests. (BACT)

**Verification:** Initial source testing shall be completed within 60 days of start-up. No later than 20 working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this Condition. The District and the CPM will notify the Owner/Operator of any necessary modifications to the plan within 20 working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District and CPM comments into the test plan. The Owner/Operator shall notify the District and the CPM within 7 working days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within 60 days of the source testing date.

**AQ-32** The Owner/Operator shall obtain approval for all source test procedures from the District's Source Test Section and the CEC Compliance Project Manager (CPM) prior to conducting any tests. The Owner/Operator shall comply with all applicable testing requirements for continuous emission monitors as specified in Volume V of

the District's Manual of Procedures. The Owner/Operator shall notify the District's Source Test Section and the CEC CPM in writing of the source test protocols and projected test dates at least 7 days prior to the testing date(s). As indicated in Condition **AQ-31** above, the Owner/Operator shall measure and include the contribution of condensable PM (back half) to the total PM10 emissions. However, the Owner/Operator may propose alternative measuring techniques to measure condensable PM such as the use of a dilution tunnel or other appropriate method used to capture semi-volatile organic compounds. Source test results shall be submitted to the District and the CEC CPM within 60 days of conducting the tests. (BACT)

**Verification:** The project Owner/Operator shall submit documentation of the procedures and results of each source test conducted as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-33** Within 90 days of start-up of the Pico Power Plant, the Owner/Operator shall conduct a District-approved source tests on exhaust point P-1 and P-2 while the Gas Turbine and associated Heat Recovery Steam Generator are operating at maximum allowable operating rates to demonstrate compliance with Condition **AQ-26**. (Toxic Risk Management Policy)

**Verification:** Initial source testing shall be completed within 60 days of start-up. No later than 20 working days before the execution of the source tests, the Owner/Operator shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this Condition. The District and the CPM will notify the Owner/Operator of any necessary modifications to the plan within 20 working days of receipt of the plan; otherwise, the plan shall be deemed approved. The Owner/Operator shall incorporate the District and CPM comments into the test plan. The Owner/Operator shall notify the District and the CPM within 7 working days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within 60 days of the source testing date.

**AQ-34** The Owner/Operator of the Pico Power Plant shall submit all reports (including, but not limited to monthly CEM reports, monitor breakdown reports, emission excess reports, equipment breakdown reports, etc.) as required by District Rules or Regulations and in accordance with all procedures and time limits specified in the District Rule, Regulation, Manual of Procedures, or Enforcement Division Policies & Procedures Manual. (Regulation 2-6-502)

**Verification:** The project Owner/Operator shall submit a Quarterly Air Quality Report (QAQR) for the preceding calendar quarter by January 30, April 30, July 30 and October 30 of each year. Each QAQR shall include, but not be limited to, a compliance matrix, a summary of operations activities, and a summary of all reports covered by this Condition. The January 30 report for each year shall include an annual summary of the four Quarterly Air Quality Reports covering the preceding calendar year. The QAQR shall be submitted to the California Energy Commission Compliance Project Manager (CPM).

**AQ-35** The Owner/Operator of the Pico Power Plant shall maintain all records and reports on site for a minimum of 5 years. These records shall include but are not limited to: continuous monitoring records (firing hours, fuel flows, emission rates, monitor excesses, breakdowns, etc.), source test and analytical records, natural gas sulfur

content analysis results, emission calculation records, records of plant upsets and related incidents. The Owner/Operator shall make all records and reports available to District and the CEC Compliance Project Manager staff upon request. (Regulation 2-6-501)

**Verification:** The project Owner/Operator shall maintain a copy of each Quarterly Air Quality Report on site for a minimum of 5 years.

**AQ-36** The Owner/Operator of the Pico Power Plant shall notify the District and the CEC Compliance Project Manager of any violations of these permit conditions. Notification shall be submitted in a timely manner, in accordance with all applicable District Rules, Regulations, and the Manual of Procedures. Notwithstanding the notification and reporting requirements given in any District Rule, Regulation, or the Manual of Procedures, the Owner/Operator shall submit written notification (facsimile is acceptable) to the Enforcement Division within 96 hours of the violation of any permit condition. (District Regulation 2-1-403)

**Verification:** The Owner/Operator shall include a compliance matrix in the Quarterly Air Quality Report required by the verification of Condition **AQ-34**. The Compliance Matrix shall summarize the project's compliance status for each Condition during the reporting period.

**AQ-37** The Owner/Operator shall ensure that the stack height of emission points P-1 and P-2 is each at least 95 feet above grade level at the stack base. (Toxic Risk Management Policy)

**Verification:** Prior to the first firing of natural gas in either turbine the Owner/Operator shall provide as built drawings of the stack or other suitable proof of the minimum stack height to the District and the CPM.

**AQ-38** The Owner/Operator of the Pico Power Plant shall provide adequate stack sampling ports and platforms to enable the performance of source testing. The location and configuration of the stack sampling ports shall comply with the District Manual of Procedures, Volume IV, Source Test Policy and Procedures, and shall be subject to BAAQMD review and approval. (Regulation 1-501)

**Verification:** Prior to the first firing of natural gas in either turbine the Owner/Operator shall provide as built drawings of the stack or other suitable proof of the minimum stack height to the District and the CPM.

**AQ-39** Within 180 days of the issuance of the Authority to Construct for the Pico Power Plant, the Owner/Operator shall contact the BAAQMD Technical Services Division regarding requirements for the continuous emission monitors, sampling ports, platforms, and source tests required by Conditions **AQ-27**, **AQ-30**, **AQ-31**, **AQ-32**, **AQ-33**, **AQ-38**, and **AQ-45**. All source testing and monitoring shall be conducted in accordance with the BAAQMD Manual of Procedures. (Regulation 1-501)

**Verification:** The project Owner/Operator shall submit documentation of compliance with this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-40** Prior to the issuance of the BAAQMD Authority to Construct for the Pico Power Plant, the Owner/Operator shall demonstrate that valid emission reduction credits in the

amount of 43.3 tons/year of Nitrogen Oxides (as defined by District Regulation 2-2-302) are under their control through enforceable contracts, option to purchase agreements, or equivalent binding legal documents. (Offsets)

**Verification:** The project Owner/Operator must submit all ERC documentation to the District and the CPM prior to the issuance of the BAAQMD Authority to Construct.

**AQ-41** Prior to the start of construction of the Pico Power Plant, the Owner/Operator shall provide to the District valid emission reduction credit banking certificates in the amount of 43.3 tons/year of Nitrogen Oxides or equivalent as defined by District Regulations 2-2-302 and 2-2-302.2. (Offsets)

**Verification:** The project Owner/Operator must surrender all ERC certificates to the District and provide copies to the CPM prior to the start of construction.

**AQ-42** Pursuant to BAAQMD Regulation 2, Rule 6, section 404.1, the Owner/Operator of the Pico Power Plant shall submit an application to the BAAQMD for a major facility review permit within 12 months of completing construction as demonstrated by the first firing of any gas turbine or HRSG duct burner. (Regulation 2-6-404.1)

**Verification:** The Owner/Operator shall notify the CPM within 10 working days of any application for, issuance of, and/or modification to any permit pertaining to air quality.

**AQ-43** Pursuant to 40 CFR Part 72.30(b)(2)(ii) of the Federal Acid Rain Program, the Owner/Operator of the Pico Power Plant shall submit an application for a Title IV operating permit to the BAAQMD at least 24 months before operation of any of the gas turbines (S-1, S-3) or HRSGs (S-2, S-4). (Regulation 2, Rule 7)

**Verification:** The Owner/Operator shall notify the CPM within 10 working days of any application for, issuance of, and/or modification to any permit pertaining to air quality.

**AQ-44** The Owner/Operator of the Pico Power Plant shall comply with the continuous emission monitoring requirements of 40 CFR Part 75. (Regulation 2, Rule 7)

**Verification:** The project Owner/Operator shall submit documentation of compliance with this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

**AQ-45** The Owner/Operator shall take monthly samples of the natural gas combusted at the Pico Power Plant. The samples shall be analyzed for sulfur content using District-approved laboratory methods. The sulfur content test results shall be retained on site for a minimum of five years from the test date and shall be utilized to satisfy the requirements of 40 CFR Part 60, subpart GG.

**Verification:** The project Owner/Operator shall submit documentation of compliance with this Condition of Certification as part of the Quarterly Air Quality Report required by the verification of Condition **AQ-34**.

## **DECLARATION OF GABRIEL D. TAYLOR**

I, Gabriel D. Taylor, declare as follows:

1. I am the Staff witness who sponsored the Staff Assessment on Air Quality for the Pico Power Project at the June 11, 2003 evidentiary hearing.
2. In preparation for my Staff Assessment on Air Quality, I reviewed and am familiar with the Preliminary Determination of Compliance for the Pico Power Project.
3. On July 15, 2003, I received the Final Determination of Compliance for the Pico Power Project.
4. I reviewed and am familiar with the Final Determination of Compliance for the Pico Power Project.
5. I understand there are changes to the Preliminary Determination of Compliance that are reflected in the Final Determination of Compliance for the Pico Power Project.
6. Based on those changes, I prepared the document entitled, "Pico Power Project Final Revisions to Staff's Air Quality Assessment," dated and filed July 22, 2003.
7. The July 22, 2003 document I prepared contains final revisions to the Staff Assessment on Air Quality and to the proposed conditions of certification.
8. The final revisions contained in the July 22, 2003 document I prepared are consistent with the changes made and reflected in the Final Determination of Compliance for the Pico Power Project.
9. It is my professional opinion that the July 22, 2003 document I prepared is valid and accurate.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated July 22, 2003 at Sacramento, California

By /s/ Gabriel D. Taylor.